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**Eur päisches  
Patentamt**

Zweigstelle  
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D.6/7.

Datum/Date

28.03.03

Zeichen/Ref./Réf. <b>pf05815/pc/cb</b>	Anmeldung Nr./Application No./Demande n°/Patent Nr./Patent No./Brevet n°. <b>02394113.1-2411-</b>
Anmelder/Applicant/Demandeur/Patentinhaber/Proprietor/Titulaire <b>TDK Corporation</b>	

## COMMUNICATION

The European Patent Office herewith transmits as an enclosure the European search report for the above-mentioned European patent application.

If applicable, copies of the documents cited in the European search report are attached.

☒ Additional set(s) of copies of the documents cited in the European search report is (are) enclosed as well.

The following specifications given by the applicant have been approved by the Search Division:

☒ abstract

☒ title

☐ The abstract was modified by the Search Division and the definitive text is attached to this communication.

The following figure will be published together with the abstract:

1

## REFUND OF THE SEARCH FEE

If applicable under Article 10 Rules relating to fees, a separate communication from the Receiving Section on the refund of the search fee will be sent later.





DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	EP 1 237 222 A (ERICSSON TELEFON AB L M) 4 September 2002 (2002-09-04) * page 5, line 40 - page 8, line 25; figure 3A *	1-15	H04B1/48 H04B1/40
X	US 6 021 318 A (SCHAFER JOSEF-PAUL) 1 February 2000 (2000-02-01) * column 3, line 51 - column 5, line 62; figure 2 *	1-15	
X	DE 100 52 711 A (SIEMENS AG) 2 May 2002 (2002-05-02) * page 3, line 23 - page 4, line 43; figure 1 *	1-3,8-11	
X	DE 198 42 706 A (SIEMENS AG) 23 March 2000 (2000-03-23) * the whole document *	1-3,8-15	
A	US 5 507 011 A (CHIGODO YOSHIKAZU ET AL) 9 April 1996 (1996-04-09) * column 5, line 63 - column 6, line 15; figure 1 *	1-15	TECHNICAL FIELDS SEARCHED (Int.Cl.7) H04B
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 21 March 2003	Examiner Lindhardt, U
<b>CATEGORY OF CITED DOCUMENTS</b> X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

# ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

EP 02 39 4113

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on  
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

21-03-2003

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
EP 1237222	A	04-09-2002	EP	1237222 A1	04-09-2002
			WO	02069435 A1	06-09-2002
US 6021318	A	01-02-2000	DE	19704151 C1	27-08-1998
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			WO	0235723 A1	02-05-2002
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			JP	6197038 A	15-07-1994
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			DE	4343719 A1	23-06-1994
			GB	2273820 A ,B	29-06-1994

Title: "SP3T PIN Switch Controlled Multi-band ASM/FEM"

With reference to your request we have performed:

A novelty search to determine if the configurations of Figure 1, Figure 9 or Figure 13, according to present report, are known.

Published available documentation from the following countries has been searched: SE, DK, NO, FI, GB, DE, CH, FR, EP, WO, AT, AU, CA, JP, RU and US (see enclosure).

The search has been performed in relevant parts of the following technical fields according to the International Patent Classification (IPC):

H01P, H03F, H03H, H04B, H04Q

and in the US documentation in relevant parts of the following US-classes:  
Where appropriate, searches in databases are also performed.

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The following material is considered relevant.

*Patent documents:*

<i>Ref</i>	<i>Country, no</i>	<i>Comments and indication of relevant passage etc. Cat</i>
1	WO 01/99444	Radio frequency base station data repeater for use in wireless data services to enhance signal to noise ratio using electronic signature to eliminate location measurement errors 2
2	WO 00/11800	Multi-band multi-function integrated tracking and data relay satellite system (TDRSS)/GPS transceiver has signal processor connected to single digital processor responsible for any final signal and/or data processing or formatting 2

Please note!

The Patent Office does not, in search reports, give any opinion on patentability, validity or infringement.

- \*) 1 = Document of particular relevance.  
2 = Documents defining the general state of the art.  
3 = Document cited for other reasons <sup>1</sup>

3	EP 1223634	High frequency switch for portable telephone, has diplexer that switches signal transfer between several receiving terminals using phase shifter and SAW terminals	2
4	EP 1079531	Integrated circuit dual-band front end, for receiving DAB signals in L-band and VHF band III; up converts VHF signals to L-band for down conversion using same signal processing chain for both bands	2
5	JP 2001345733	Transmitter and receiver control circuit has first low pass filter with lower impedance from antenna terminal side than first transmitting terminal side	2
6	JP 2002016401	High-frequency switch circuit for mobile telephone, has LC parallel resonance circuit connected to cathode of diode, to obtain signal at resonance frequency	2
7	JP 2001186047	High frequency circuit for radio communication apparatus such as portable telephone, has diplexer sections with filter in one section whose cut-off frequency band is set within specific range	2
8	JP 2001285122 2 US 2001, 0027119	Mobile communication device e.g. dual band mobile telephone for motor vehicle, has four port high frequency switch to separate cellular and mobile communication systems into transmission and receiver sections	3
9	US 5486836	Dual rectangular patch antenna system for providing isolation and diversity - switches between two similar rectangular patch antennae according to external signal e.g. for time-duplex operation to select one particular antenna during transmit operation	3
10	WO 02/065780	Broadcast TV and satellite switching system to switch multiple broadcast signals for transmission through single coaxial cable to TV receiver	3

*Coordinating engineer:* Stefan Hultquist

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- \*) 1 = Document of particular relevance.  
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 3 = Document cited for other reasons<sup>1</sup>